

**REMARKS**

Claims 1-15 are pending. Claims 1-3, 5-11, and 13-15 stand rejected. Claim 3 has been canceled without prejudice or a disclaimer. Claims 1 and 8 are independent claims.

The disclosure stand objected for containing numerous grammatical and idiomatic errors. In response, applicant has made the corrections. Applicant believes that the changes are limited to the grammatical and idiomatic errors and do not add new matter. Applicant respectfully requests withdrawal of the objection.

Claims 4 and 12 stand objected for reciting “coherent length” instead of “coherence length.” In response, applicant has amended the claims to recite “coherence length.” Applicant respectfully requests withdrawal of the objection.

Claim 10 stands objected for containing grammatical errors. In response, applicant has amended the claim to recite “the light that is generated by the semiconductor optical amplifier and that reaches the reflector via the optical waveguide is reflected.” Applicant respectfully requests withdrawal of the objection.

Claims 5 and 13 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement by reciting an “optical wavelength [of] 10mm or more.” Applicant respectfully submits that applicant originally intended claims 5 and 13 to recite that “optical waveguide is 10mm,” not “optical wavelength is 10mm;” however, applicant inadvertently recited the latter (see page 7, line 18-20). As such, applicant amends claims 5 and 13 to recite the former. Applicant respectfully requests withdrawal of the rejections.

Claim 8 stand rejected under 35 U.S.C. 112, second paragraph, for failing to provide a proper antecedent basis for “the broad-band reflector.” In response, applicant has deleted the term “broad-band.” Applicant respectfully requests withdrawal of the rejection.

Applicant wishes to thank the Examiner for indicating that claims 4, 5, and 12 would be allowed if the claims are rewritten as independent claims incorporating all features of the base and any intervening claims. Applicant, however, wishes to defer rewriting claims 4, 5, and 12 as independent claims at this time.

Claim 1 stands rejected under 35 U.S.C. ' 102(b) as allegedly being anticipated by Tiemeijer *et al.* (High-Gain 1310-nm Reflective Semiconductor Optical Amplifiers with Low-Gain Uncertainty, IEEE Photonics Technology Letters, Vol. 9, No. 1 (January 1997)) ("Tiemeijer"). Claim 8 stands rejected under 35 U.S.C. ' 103(a) as allegedly being obvious over Tiemeijer in view of Abdelkader *et al.* (U.S. 5,555,127) ("Abdelkader").

Claims 1 and 8 recite a light source comprising, *inter alia*, **"an optical waveguide disposed between the semiconductor optical amplifier and the reflector."** Support for the light source comprising, *inter alia*, "an optical waveguide disposed between the semiconductor optical amplifier and the reflector" can be found in Figure 5.

According to the United States Court of Appeals for the Federal Circuit, a claim is anticipated only if a single prior art reference set forth each and every feature recited in a claim (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)), including that in **functional language** (*In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ2d 1429 (Fed. Cir. 1997) (holding that the patent applicant is free to recite features of an apparatus claim in functional language as long as the features are not inherent to the prior art)). Meanwhile, a claim is rendered obvious if one or more prior art references, among others, teaches **all features** in the claims (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)), including those in **functional language** (*In re Schreiber*, 128 F.3d at 1478).

Tiemeijer, as read by applicant, discloses a reflective semiconductor optical amplifier

("SOA") comprising a SOA, an external reflector, an aspheric lens, and a Faraday rotator. However, Tiemeijer does not disclose a light source comprising, *inter alia*, "**an optical waveguide disposed between the semiconductor optical amplifier and the reflector**," as recited in claims 1 and 8.

Abdelkader, as read by applicant, discloses a planar hybrid optical amplifier. Applicant respectfully submits that the optical waveguide, as disclosed in Abdelkader, is not disposed between the semiconductor optical amplifier and the reflector. As such, Abdelkader also fails to disclose a light source comprising, *inter alia*, "**an optical waveguide disposed between the semiconductor and the reflector**," as recited in claims 1 and 8.

As both Tiemeijer and Abdelkader fail to disclose a light source comprising, *inter alia*, "**an optical waveguide disposed between the semiconductor and the reflector**," as recited in claims 1 and 8, the references, alone or in combination, fails to anticipate and/or render claim 8 obvious. Applicant respectfully request withdrawal of the rejections on claims 1 and 8.

Moreover, applicant respectfully traverses the rejection on claim 1 on a procedural ground. Claim 1 recites a SOA "including an active layer serving as a gain area, an under-cladding layer and an over-cladding layer."

According to the Federal Circuit, the rejection of a claim cannot be based on an allegedly "common knowledge" (*In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001); see also *In re Soli*, 317 F.2d 941, 137 USPQ 797 (C.C.P.A. 1963) (holding that if the Office Action relies on a scientific theory, the Office Action must provide evidentiary support for the existence and meaning of the scientific theory)), without a prior art references or concreted documentary evidence (see *id.*).

In rejecting claim 1, the Office Action appears to recognize that the SOA disclosed in Tiemeijer does not contain one of either an under-cladding layer or an over-cladding layer. However, the Office Action makes a factual finding that it is “inherent that the active layer of the SOA is formed between an under-cladding and an over cladding layer” (present Office Action page 4, line 1-2). In addition, the Office Action does not provide documentary evidence to support the finding, as required by the Federal Circuit.

Applicant respectfully submits that the Tiemeijer’s disclosure of an SOA that lacks one of either an under-cladding layer or an over-cladding layer **appears to supports the conclusion that the SOA containing both the under-cladding layer and the over-cladding layer is not inherent.** Therefore, applicant respectfully requests a concrete documentary evidence supporting the factual finding by the Office Action that the SOA disclosed Tiemeijer inherently contains an under cladding layer and an over-cladding layer, as required by MPEP 2144.03(C). Otherwise, applicant respectfully requests withdrawal of the rejection.


Other dependent claims in this application are each dependent on the independent claims 1 and 8 and believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Amendment  
Serial No. 10/806,549

Should the Examiner deem that there are any issues which may be best resolved by telephone, please contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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Date: March 13, 2006

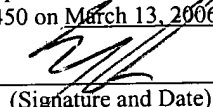
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